



UNITED STATES PATENT AND TRADEMARK OFFICE

HA

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/822,798

04/13/2004

Mitsuo Ueda

2004_0576A

3009

513

7590

08/21/2006

WENDEROTH, LIND & PONACK, L.L.P.

2033 K STREET N. W.

SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

MCCLLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/822,798

Applicant(s)

UEDA ET AL.

Examiner

Renata McCloud

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,3,7,8,10,11,14,16,17 rejected under 35 U.S.C. 102(b) as being anticipated by Doyama et al (US 5646499).

Claim 1: a rectifier (Fig. 23:5); an inverter (2); an inverter control unit including a power supply estimation unit (col. 6:45-49, the inverter control system) estimating a voltage of a single phase AC power supply and changing the value of the current or voltage outputted from the inverter so that the waveform of an input voltage of the inverter becomes approximate to an absolute value of waveform of an output voltage from the supply based on the power supply estimation unit (Col. 7:15-29, 7:58-8:20;14:18-41).

Claim 3: the power supply voltage estimation unit has a zero cross detector and estimates a voltage of the power supply (Col. 13:57-14:10).

Claim 7: the estimation unit includes a timing detection unit (Fig. 4:15, Fig. 5:15) for detecting a timing at which the inverter input voltage is at a maximum on the basis of the detected input voltage of the inverter and estimates a voltage (Col. 8:36-59)

Claim 8: the rectifier has a capacitor (Fig. 23: 4)

Claims 10,11,14,16,17: the motor is used in an air conditioner, compressor, heat pump, heating, and cooling (Col. 1:5-10, heating is used in drying, an air-conditioning/cooling/heating are all air blowers).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyama et al.

Claims 13,15: Doyama et al teach the limitations of claim 1. Referring to claims 13 and 15, they do not teach the various different appliances such as, washing machine and vacuum cleaner. However these appliances require a motor, which is well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the motor of Doyama et al's to run the appliances.

5. Claims 2, 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doyama et al in view of Mose et al (US 4876637).

Claim 2: Doyama et al teach the limitations of claim 1. Referring to claim 2, they do not teach one of a first and second control. Mose teaches the second control of increasing the output current or voltage of the inverter when the supply power voltage is decreasing (Col. 5:48-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Doyama et al to increase the voltage as taught by Mose et al in order to prevent overcurrent.

Claim 4: Doyama et al teach the limitations of claim 1 and referring to claims 4, detecting the voltage inputted to the inverter and comparing the absolute value of the power supply with the detected voltage (Col. 7:16-27, 58-65). They do not teach first or second controls. Mose et al teach increasing the output current or voltage of the inverter when the supply power voltage is decreasing (Col. 5:58-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Doyama et al to increase the voltage as taught by Mose et al in order to prevent overcurrent.

6. Claims 2, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polo et al (US 6254353).

Claims 2, 4, 6: Doyama et al teach the limitations of claim 1 and referring to claims 4 and 6, an induction motor, and detecting the voltage inputted to the inverter and comparing the absolute value of the power supply with the detected voltage (Col. 7:16-27, 58-65). They do not teach the claimed controls. Polo et al teach increasing or decreasing the speed of the output current or voltage of the inverter when the supply power voltage is lower or higher respectively than the magnitude of the power supply voltage (col. 3:58-4:4; Col. 9:52-10:25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Doyama et al to control the motor as taught by Polo et al in order to alter the operation of the motor to prevent a stall condition.

7. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Doyama et al in view of Polo et al as applied to claim 4 above, further in view of Takahashi et al (US 6002220).

Claim 5: Doyama et al and Polo et al teach the limitations of claim 4. Referring to claim 5, Doyama et al teach detecting the voltage inputted to the inverter and comparing the absolute

Art Unit: 2837

value of the power supply with the detected voltage (Col. 7:16-27, 58-65). Polo et al teach detecting the voltage inputted to the inverter (Fig. 2:212) and increasing or decreasing the speed of the output current or voltage of the inverter when the supply power voltage is lower or higher, respectively, than the magnitude of the power supply voltage (col. 3:58-4:4; Col. 9:52-10:25). They do not teach a brushless motor. Takahashi et al teach a brushless motor (col. 9:40-42) and advancing or delaying the phase of the output current or voltage of the inverter when the input voltage is higher or lower respectively, than the magnitude of the supply power voltage (Col. 8:40-9:36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Doyama et al to use a motor as taught by Takahashi et al order provide an economical system having high efficiency and minimized loss.

n

8. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyama et al in view of in view of Takagi et al (US 6367273).

Claim 9: Doyama et al teach the limitations of claim 1. Referring to claim 9, they do not teach the rectifier having an inductor. Takagi et al teach a rectifier having an inductor (Fig. 1:25). IT would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Doyama et al to include and inductor in order to reduce harmonics.

Claim 12: Doyama et al teach the limitations of claim 1. Referring to claim 12, they do not teach a refrigerator. Takagi et al teach a refrigerator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the motor of Doyama et al's in the refrigerator or Takagi et al in order to run the refrigerator.

Response to Arguments

9. Applicant's arguments filed 12/06/2005 have been fully considered but they are not persuasive. In response to applicant's argument that Doyama et al do not teach or anticipate the limitations of claim 1; applicant's claim language is broad. Doyama et al teach an inverter controller that adjusts the inverter output to maintain a constant frequency (col. 7: 16-28, fig. 17; abstract lines 12-19). The inverter input is made approximate to the absolute value of the power supply, which is sensed by sensor (3) and used as feedback. They further teach estimating the power supply using a zero cross detector (fig. 23:113; col. 14:26-30), and changing the current output from the inverter so that the input into the inverter becomes approximate to the absolute value (amplitude) of a waveform of the output voltage from the ac supply (col. 14:31-48). Applicant's claim language is "wordy" and broad reads "an voltage inputted into the inverter becomes approximate to an absolute value of a waveform of the voltage output from the ac supply". Doyama et al teaches a feedback loop, therefore the input into the inverter will be approximate to the output of the inverter.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071,

Art Unit: 2837

5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the references all teach a motor controller.

Conclusion

10. This is a continuation of applicant's earlier Application No. 10822798. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

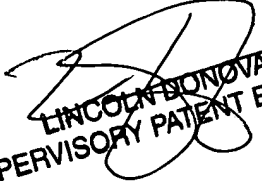
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud
Examiner
Art Unit 2837

rdm


LINCOLN BONDOVAN
SUPERVISORY PATENT EXAMINER